REMARKS

Claims 15-17 are added. Claims 1-17 remain in the application. No new matter is added by the new claims.

The Rejections:

In the Final Office Action dated August 8, 2007, the Examiner rejected Claims 1-3 and 8 under 35 U.S.C. 102(b) as being anticipated by Hakala et al. U.S. Patent No. 6,367,587.

Referring to Claim 1, the Examiner stated that Hakala discloses an elevator drive machine including multiple electric motors and a traction sheave as claim (see all figures and respective portions of the specification). Hakala further depicts from figure 2, a pair of space apart end plates (frames 3, 3a) each retaining an associated bearing (22); a pair of electric motors having rotor (17, 18) and stator (19, 20); a shaft (not described) but depicted in figure 2 and 3 (see dotted line) having opposed free ends, and being rotatably supported by bearings (22), each free end of the shaft being drivingly connected to an associated one of the motors. Furthermore, Hakala discloses a traction sheave (2) supported by the shaft for rotation by the motors (see figure 2, 5 and 6).

As to Claim 2, the Examiner stated that Hakala depicts in figures 2 and 3, rotors (17, 18) arranged on the associated free end of the shaft and a stator (19, 20) mounted on an associated bearing end plate by a cage housing.

Referring to Claim 3, the Examiner stated that Hakala discloses at least one brake disk not label see figure 4 attached to the traction sheave (2) and at least one disk brake (9) acting on at least one brake disk (see Col. 4, lines 20-22).

As to Claim 8, the Examiner stated that Hakala discloses a secondary sheave (47) attached to the machine frame by a support (46) (see figure 5).

The Examiner rejected Claims 4-7 and 9-14 under 35 U.S.C. 103(a) as being unpatentable over Hakala in view of Albrich et al. U.S. Patent No. 6,429,554.

Referring to Claims 4 and 9, the Examiner stated that Hakala addresses all the similar limitations of claim 1 above, but does not explicitly describes having a drive unit with a plurality of frequency converters connected to the motors and operating in a master/slave mode. However, Albrich discloses an system in which an electric motor is used cableway drives or lift systems in which a plurality of frequency converters are connected to the motor and operating in a master/slave (see claim 1). Additionally, Albrich discloses in figure 1, frequency converters (5a-5f). Since Hakala and Albrich are in the same field of endeavor regarding lift systems, the purpose disclosed by Albrich would have been recognized in the pertinent art of Hakala. According to the Examiner, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a plurality of frequency converters connected to each motors and operating in a master/slave mode as taught by Albrich within the teaching of Hakala for the purpose/advantages that in the event of failure of one or more stator segments in the motor (i.e. winding short circuit or failures in the associated frequency converter) the electric motor can continue to run generally without additional measures, or in the worst case scenario, the other motor will continue to operate.

As to Claims 5, 10 and 13, the Examiner stated that Albrich depicts from figure 1, a control portion (6a) of the master frequency converter (5a) that obviously specifies a total current distributed among the frequency converters (5b-5f), wherein each of the slave frequency converters (5b-5f) obviously include a current regulator for regulating a current based upon a reference current value and an actual current value detected by the current detection device (9a).

Referring to Claims 6 and 11, the Examiner stated that Albrich depicts from figure 1, a bus system connecting frequency converters (5a-5f) for communicating at least one of reference-current, synchronization signals and identification signals from the main control device (11).

As to Claim 12, the Examiner stated that Albrich discloses resolver line (15), representing an actual rotational speed of a motor shaft by a tachogenerator (not shown) coupled to the shaft and a control portion (6a) generating a signal representing a reference rotational speed (see figure 1 and Col. 3, lines 31-41).

As to Claim 14, the Examiner stated that Hakala discloses a secondary sheave (47) attached to the machine frame by a support (46) (see figure 5).

In the Advisory Action, dated November 26, 2007, the Examiner stated that he believes that the prior art of record still reads on the claims as they have been presented.

The Response:

Applicants appreciate the telephone interview conducted with Applicants' attorney Theresa Orr on December 6. Applicants believe that the Examiner's position is that, even though he admits that Hakala does not show a shaft, there is a shaft in the Hakala drive machine.

New Claim 15 is supported by the description on Page 2, Line 24 through Page 3, Line 2 and Fig. 2. New Claims 16 and 17 correspond to Claims 2 and 3 respectively.

Claim 15 recites "a shaft having opposed free ends, said shaft being rotatably supported by said bearings, each of said free ends of said shaft extending beyond an associated one of said bearings and having mounted thereon a rotor of an associated one of said motors". As explained below, Hakala does not have a shaft. Furthermore, the rotors **17**, **18** of Hakala are mounted on the bearings **22** and extend radially outwardly between the bearings to a point adjacent the traction sheave **2** where rotor magnets **21** are attached. Thus, the Hakala rotors are not mounted on a free end of a shaft extending beyond an associated bearing.

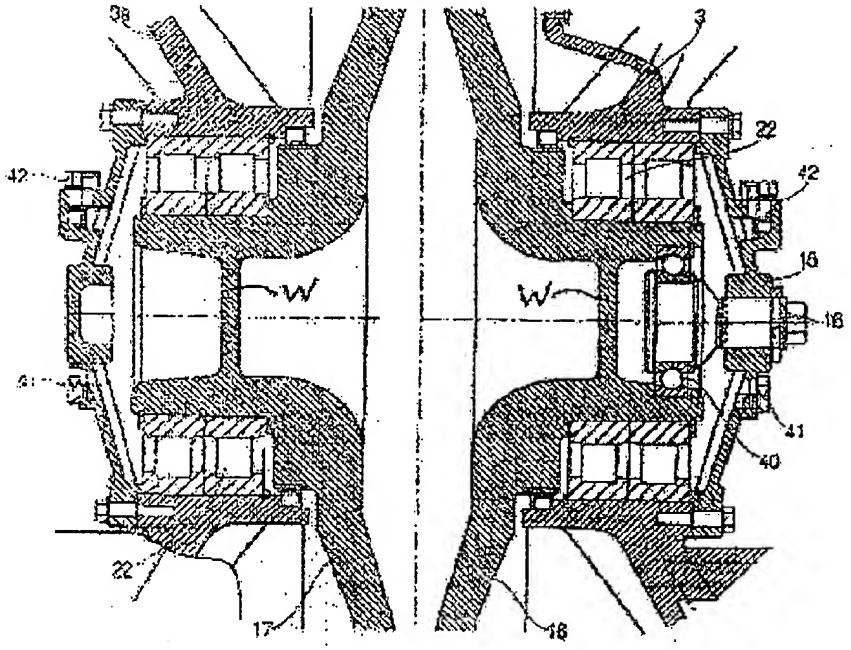
Applicants' Claims 1 and 9 recite "a shaft having opposed free ends, said shaft being rotatably supported by said bearings, each of said free ends of said shaft being drivingly connected to an associated one of said motors". The Hakala drive machine does not have such a shaft.

The Examiner stated that Halaka discloses "a pair of electric motors having rotor (17, 18) and stator (19, 20)". According to the Examiner, Hakala depicts "a shaft (not described) but depicted in figure 2 and 3 (see dotted line) having opposed free ends, and being rotatably supported by bearings (22), each free end of the shaft being drivingly connected to an associated one of the motors." The Examiner also stated that "Hakala discloses a traction sheave (2) supported by the shaft for rotation by the motors (see figure 2, 5 and 6)." As to Claim 2, the Examiner stated that "Hakala depicts in figures 2 and 3, rotors (17, 18) arranged on the associated free end of the shaft and a stator (19, 20) mounted on an associated bearing end plate by a cage housing."

The Examiner failed to identify what portion of the structure shown in the drawings represents Applicants' "shaft". The only "dotted" lines in Hakala Fig. 2 are two dashed lines in the right part of the drawing (depicting section A-A in Fig. 1) that represent hidden edges of the frame block **3**. Section 608.02 of the MPEP refers to such lines as "hidden" lines. Hakala Fig. 3 shows two "chain" lines; one horizontal and one vertical. Chain lines are used to as center lines or lines of symmetry. See the attached definitions of dashed lines and chain lines from the *EG1021/2 Drawing Handbook* published by the University of Leicester. Section 608.02 of the MPEP refers to "chain" lines as "projected" lines.

As shown in Figs. 2 and 3, the Hakala traction sheave **2** is mounted on the rotors **17** and **18** which rotors are attached together by fasteners. Each of the rotors **17** and **18** has an outwardly extending hollow center portion on which a pair of bearings **22** is mounted to support the rotors on corresponding frame blocks **3a** and **3**. The horizontal chain line shown in Fig. 3 simply depicts the axis of rotation of the rotors **17** and **18**. There is no shaft drivingly connected to the motors as is evident from the vertical wall (designated **W** in Hakala Fig. 3 below) concentric with one of the bearings **22** and closing each of the hollow center portions of the rotors **17** and **18**. The only connection between the rotors **17** and **18** is by fasteners that attach the rotors directly to the traction sheave **2** as shown in Fig. 2. The center lines in Fig. 3 are located in the hollow interior of the rotors **17** and **18**.

FIG. 3



In the Response to Applicants' arguments, the Examiner stated that "Hakala et al. clearly shows a pair of motors each having rotors (17, 18) and stators (19, 20), which rotate in a shaft as seen in figures 2 and 3, and being supported by rotors 17, 18, which are part of the pair of motors." This statement does not make sense to Applicants. How do the motors "rotate in a shaft"? Even if the motors "rotate in a shaft", Applicants' claims require "free ends of said shaft being drivingly connected to an associated one of said motors". The Examiner has not identified a corresponding structure in Hakala.

Applicants' Claims 1 and 9 also recite "a traction sheave supported by said shaft for rotation by said motors". Clearly, the Hakala traction sheave **2** is supported by the rotors **17** and **18**.

Finally, Hakala describes the disclosed drive machine as <u>not having a drive shaft</u>. Hakala states in Col. 3, Lines 3-10 that:

> By placing the traction sheave between two motors, a compact machine structure is achieved, as well as a possibility to transmit the torque, power and forces directly from the machine to the traction sheave without a separate drive shaft. By

coupling the rotors of two different electric motors mechanically together with the tractions sheave, these advantages are achieved to a distinct degree.

Thus, the Hakala drive machine does not include or suggest the following elements of Applicants' Claim 1:

a shaft having opposed free ends, said shaft being rotatably supported by said bearings, each of said free ends of said shaft being drivingly connected to an associated one of said motors (Hakala has no shaft); and

a traction sheave supported by said shaft for rotation by said motors (the Hakala traction sheave **2** is supported by the rotors **17, 18**).

The above comments also apply to independent Claim 9.

Albrich does not provide the missing elements.

If the Examiner continues to insist that Hakala has a shaft, Applicants request that the Examiner identify the structure in Hakala Figs. 2 and 3 considered to be a shaft.

In view of the above arguments, Applicants believe that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.

University of Leicester

EG1021/2 DRAWING HANDBOOK

2005/6

C.J. MORRISON
H.B. Dong

gap of 2-3mm should be left. The projection line should then extend the same distance beyond the dimension line.
Dimension lines are headed with arrows which touch the projection lines. Centre lines should not be used as dimension lines but they can be extended when used in the role of projection lines.

Figure 2(a)

Types of line		
Line	Description	Application
A	Continuous thick	A1 Visible outlines A2 Visible edges
B	Continuous thin	B1 Imaginary lines of intersection B2 Dimension lines B3 Projection lines B4 Leader lines B5 Hatching B6 Outlines of revolved sections B7 Short centre lines
C	Continuous thin irregular	[1]C1 Limits of partial or interrupted views and sections, if the limit is not an axis
D	Continuous thin straight with zigzags	[2]D1 Limits of partial or interrupted views and sections, if the limit is not an axis
E	Dashed thick	E1 Hidden outlines E2 Hidden edges
F	Dashed thin[3]	F1 Hidden outlines F2 Hidden edges
G	Chain thin	G1 Centre lines G2 Lines of symmetry G3 Trajectories and loci G4 Pitch lines (including circles)
H	Chain thin, thick at ends and changes of direction	H1 Cutting planes
J	Chain thick	J1 Indication of lines or surfaces to which a special requirement applies (drawn adjacent to surface)
K	Chain thin double dashed	K1 Outlines and edges to adjacent parts K2 Outlines and edges of alternative and extreme positions of movable parts K3 Centroidal lines K4 Initial outlines prior to forming [4]K5 Parts situated in front of a cutting plane K6 Bend lines on developed blanks or patterns